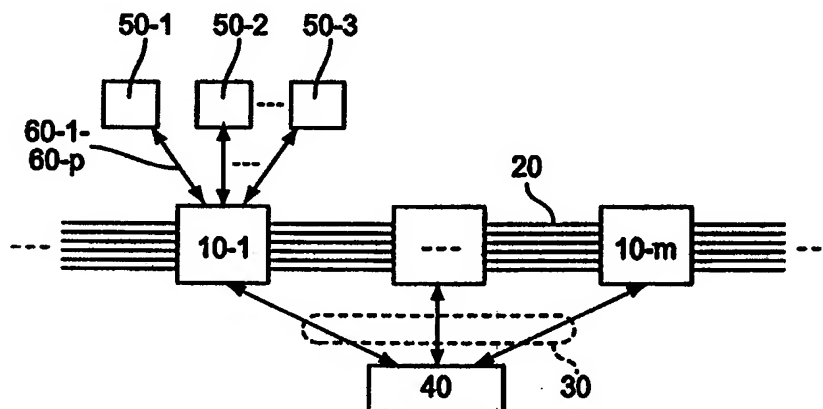




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : H04L 12/64, 29/06	A3	(11) International Publication Number: WO 99/25096 (43) International Publication Date: 20 May 1999 (20.05.99)
(21) International Application Number: PCT/US98/23785 (22) International Filing Date: 10 November 1998 (10.11.98) (30) Priority Data: 68/966,634 10 November 1997 (10.11.97) US (71) Applicant: WARPSPEED COMMUNICATIONS [US/US]; 6683 Owens Drive, Pleasanton, CA 94588 (US). (72) Inventors: GOLDEN, Michael, E.; 3693 Mohr Avenue, Pleasanton, CA 94588 (US). COBB, Richard, E.; 1907 20th Street, San Francisco, CA 94107 (US). GRENLEY, George, R.; 2136 Armstrong Drive, Pleasanton, CA 94588 (US). RUNDQUIST, William, A.; 267 Yerba Buena Place, Fremont, CA 94536 (US). CHU, Todd, D.; 1219 Thurston Avenue, Los Altos, CA 94024 (US). WOODYATT, James, H.; 1276 12th Avenue, San Francisco, CA 94122 (US). JEX, Jessica, Dasha; 14 Whitmore Place #14, Oakland, CA 94611 (US). DeAVILA, Miguel, J.; 1162 Shotwell, San Francisco, CA 94110 (US). (74) Agents: JAKOPIN, David, A. et al.; Pillsbury Madison & Sutro, LLP, 1100 New York Avenue N.W., Washington, DC 20005 (US).		(81) Designated States: AU, CA, JP, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims</i> <i>and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 2 September 1999 (02.09.99)

(54) Title: NETWORK FOR PROVIDING SWITCHED BROADBAND MULTIPPOINT/MULTIMEDIA INTERCOMMUNICATION



(57) Abstract

The present invention provides broadband multimedia communication over the standard circuit-switched public switched telephone network infrastructure (PSTN) and other physical or virtual circuit-switched infrastructures while simultaneously and transparently interoperating with the public Internet packet-switched infrastructure to effectively merge the capabilities of the two types of infrastructures into a seamless capability that can bring the benefits of using both types of existing switching infrastructures to large groups of users under the control of the same common and simple interface tools such as web browsers. The invention enables users to establish both packet-switched connections for sending or receiving content for which low-latency and unpredictable response times are not a problem (i.e. text, small graphics, e-mail, small file transfers); and circuit-switched connections for sending or receiving content that benefits from streaming data at fixed data rates, without contention for bandwidth from other users during a communication session, (i.e. video, voice, complex graphics and animations, or large file transfers). The broadband network of the present invention thus mates the convenience of point-and-click on-demand Internet-type packet-switched connectivity with the continuity of a circuit-switch connection, and bundles B channels, or controls connections on virtual circuit switches such as ATM or RSVP for the required bandwidth on-demand for video conferencing and other high-bandwidth applications.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav	TM	Turkmenistan
BF	Burkina Faso	GR	Greece		Republic of Macedonia	TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's	NZ	New Zealand		
CM	Cameroon		Republic of Korea	PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakhstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

INTERNATIONAL SEARCH REPORT

Inter . . . Application No

PCT/US 98/23785

A. CLASSIFICATION OF SUBJECT MATTER

IPC 6 H04L12/64 H04L29/06

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 H04L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	<p>EP 0 336 598 A (AMERICAN TELEPHONE & TELEGRAPH) 11 October 1989</p> <p>—</p> <p>see abstract see page 8, line 59 - page 12, line 49 see page 16, line 39 - line 47 see page 16, line 56 - page 17, line 5 see page 25, line 26 - line 30 see page 40, line 47 - page 41, line 18 see page 42, line 3 - line 50</p> <p>—/--</p>	<p>1,28,33, 95 11-15, 20,24, 29,31, 33, 35-37, 41,43, 44, 53-55, 59,68, 69,88,95</p>

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

15 June 1999

Date of mailing of the international search report

12. JULI 1999

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Masche, C

INTERNATIONAL SEARCH REPORT

Interim Application No

PCT/US 98/23785

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	<p>see page 47, line 47 - line 56 see page 51, line 42 - line 52 see figures 2-5</p> <p style="text-align: center;">---</p>	
Y A	<p>WO 97 07625 A (NORTHERN TELECOM LTD) 27 February 1997</p>	<p>1,28,33, 77,95 3-8,13, 15,18, 21,25, 28,29, 34,36, 37,42, 43, 45-47, 49,50, 54,55, 81-83, 85,86</p>
	<p>see abstract see page 9, line 30 - page 11, line 7 see page 20, line 29 - page 21, line 13 see figures 7,8</p> <p style="text-align: center;">---</p>	
Y A	<p>US 5 546 379 A (MOON TIEN-JAN A ET AL) 13 August 1996</p>	<p>77</p> <p>78,96</p>
	<p>see abstract see column 3, line 46 - column 4, line 5</p> <p style="text-align: center;">---</p>	
Y A	<p>WO 94 27296 A (COMMUNICATION BROADBAND MULTIM) 24 November 1994</p>	<p>61,62, 73,74 97</p>
	<p>see abstract see page 6, line 27 - line 34 see page 7, line 11 - line 24 see page 8, line 9 - page 9, line 17 see page 11, line 30 - line 38 see page 13, line 6 - line 33 see figures 1-4</p> <p style="text-align: center;">---</p>	
Y A	<p>US 5 280 477 A (TRAPP TIMOTHY J) 18 January 1994</p>	<p>61,62, 73,74 97</p>
	<p>see column 6, line 52 - column 7, line 21 see figure 4</p> <p style="text-align: center;">---</p>	
A	<p>US 5 477 542 A (IWAMI NAOKO ET AL) 19 December 1995</p>	<p>61,62, 73,74</p>
	<p>see column 3, line 52 - column 4, line 19 see column 4, line 61 - column 5, line 27 see figure 2</p> <p style="text-align: center;">-----</p>	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 98/23785

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☒ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International Application No. PCT/US 98/23785

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-60 68-72 77-95

using internet protocol addresses for routing

2. Claims: 61-67 73-76 96 97

selecting certain data for presentation

INTERNATIONAL SEARCH REPORT

Information on patent family members

Inte : Application No

PCT/US 98/23785

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0336598 A	11-10-1989	US 4875206 A	17-10-1989
		US 4899333 A	06-02-1990
		US 4893302 A	09-01-1990
		DE 68925830 D	11-04-1996
		DE 68925830 T	17-10-1996
		HK 145696 A	09-08-1996
		JP 2013047 A	17-01-1990
		JP 2594640 B	26-03-1997
		SG 43795 A	14-11-1997
		CA 1321818 A	31-08-1993
		CA 1315376 A	30-03-1993
WO 9707625 A	27-02-1997	US 5610910 A	11-03-1997
		CA 2227474 A	27-02-1997
		EP 0845186 A	03-06-1998
		JP 10512418 T	24-11-1998
		US 5828666 A	27-10-1998
US 5546379 A	13-08-1996	US 5631897 A	20-05-1997
		JP 7107114 A	21-04-1995
		US 5678004 A	14-10-1997
WO 9427296 A	24-11-1994	US 5544315 A	06-08-1996
US 5280477 A	18-01-1994	AU 5016993 A	15-03-1994
		WO 9405102 A	03-03-1994
US 5477542 A	19-12-1995	JP 6284148 A	07-10-1994